

ABSTRACT OF THE DISCLOSURE

A universal electronic switching node serves as an edge node in a high-capacity network with an optical core. The universal edge node may handle a variety of traffic classes and may control traffic admission, connection definition, connection routing and core node configuration. The provided capabilities significantly simplify network operation and control. The universal edge node includes input ports for receiving data streams, output ports for transmitting the data streams through the optical core, a switching fabric for communicating these data streams between input and output ports and a controller for controlling this communicating. In particular, the controller can select a route through the optical core, schedule the communication between input and output ports and adaptively allocate the bitrate of this communication.